PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference A 7930/RN	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. PCT/EP2004/008683	International filing date *(day/month/year)* 03.08.2004	Priority date *(day/month/year)* 11.08.2003
International Patent Classification (IPC) or national classification and IPC C07K14/415, C12N15/82, A01H5/00, C12N15/29		
Applicant KWEEK-EN RESEARCHBEDRIJF AGRICO B.V. et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 11 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 10 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☒	Box No. II	Priority
☒	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☒	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
13.06.2005	26.09.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Burkhardt, P Telephone No. +49 89 2399-7456

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/008683

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-105 as originally filed

Sequence listings part of the description, Pages

1-86 as originally filed

Claims, Numbers

1-43 received on 13.06.2005 with letter of 13.06.2005

Drawings, Sheets

1/51-51/51 as originally filed

☒ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/008683

Box No. II Priority

1. ☐ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
   - ☐ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
   - ☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).

2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

   see separate sheet

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

   ☐ the entire international application,

   ☒ claims Nos. 2 - 43 (all partially)

   because:

   ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

   ☒ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. 2 - 43 (all partially) are so unclear that no meaningful opinion could be formed *(specify)*:

   see separate sheet

   ☒ the claims, or said claims Nos. 2 - 43 (all partially) are so inadequately supported by the description that no meaningful opinion could be formed.

   ☐ no international search report has been established for the said claims Nos.

   ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form	☐	has not been furnished
	☐	does not comply with the standard
the computer readable form	☐	has not been furnished
	☐	does not comply with the standard

   ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

   ☐ See separate sheet for further details

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1 - 7, 21, 22, 26 - 29, 32 - 43
	No:	Claims	8 - 20, 23 - 25, 30, 31
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1 - 43
Industrial applicability (IA)	Yes:	Claims	1 - 43
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Supplemental Box relating to Sequence Listing

Continuation of Box I, item 2:

1. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this report has been established on the basis of:

   a. type of material:

   ☒ a sequence listing

   ☐ table(s) related to the sequence listing

   b. format of material:

   ☒ in written format

   ☒ in computer readable form

   c. time of filing/furnishing:

   ☒ contained in the international application as filed

   ☒ filed together with the international application in computer readable form

   ☐ furnished subsequently to this Authority for the purposes of search and/or examination

   ☐ received by this Authority as an amendment on

2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional observations, if necessary:

Re Item I

Basis of the opinion

1. The IPEA notes that the wording of amended claim 2 "[...] whereby the polynucleotide **has not the sequence** of Mi1.1 or Mi1.2 as depicted in SEQ ID NO:7 or 9" does not find an exact basis in the application as filed.

2. Previous claim 2 reads "[...] whereby the polynucleotide **does not consist of** [...]" which is not identical to the wording of present claim 2. The wording of previous claim 2 is also found in the description. The IPEA did, however, not find the wording of present claim 2.

3. As these differences obviously relate to a semantic error the IPEA does not object to said amendment.

4. Amended claim 8 appears to meet the requirements of Article 34(2)(b) PCT.

Re Item II

Priority

The present application appears to be entitled to the priority date. The sequences claimed in the priority document and in the present application appear to be identical.

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The subject-matter of parts (g), (h), (j), (k), (l) of present claim 8 and the part relating to "a polypeptide encoded by a segment of chromosome or linkage group 6 of *Solanum bulbocastanum* or *Solanum tuberosum* which co-segregates with a marker from Tables 3a or 3b or comprises a replication site or hybridisation site for said marker and which mediates resistance to pathogens of the phylum Oomyceta" is

considered totally unclear (Article 6 PCT).

2. It may be true that each of the terms has a defined meaning in the art. In their combination, however, they do not yield in a clear and unambiguous definition of the claimed subject-matter. Moreover an undue burden is placed on others trying to establish the extent of protection (Article 5 PCT).

3. The deficiencies mentioned above are so severe that a meaningful examination for the mentioned parts of claim 8 appears to be impossible. Consequently, the examination will be limited to the those parts of claim 8 that appear to be clear and supported, i.e. parts (a), (b), (c), (d), (e), (f) and (l).
The same objection applies to present claim 2 and to claims 3 - 7 and 9 - 43 depending on or relating to claims 2 and 8.

4. Present claim 36 relates to a method comprising a compound defined by reference to a desirable characteristic or property, namely to stimulate resistance to a plant pathogen of the phylum Oomyceta (identified by the method of claim 32).

5. The application does not provide support within the meaning of Article 6 PCT or disclosure within the meaning of Article 5 PCT for such a compound. In the present case, the claim so lacks support, and the application so lacks disclosure, that a meaningful examination is impossible.

6. Independent of the above reasoning, the claim also lacks clarity (Article 6 PCT). An attempt is made to define the compound by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful examination impossible.

7. Consequently the claim is only examined insofar it does not relate a compound as identified by the method of claim 32. The same holds true for dependent claims 37 - 43.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Article 33(2) PCT (Novelty)

1.1 The following documents (D) are referred to; the numbering is following the order of the International Search Report:

D1 Rossi *et al.*, 1998. PNAS USA 95:9750-9754.
D2 WO-A-9806750 (Keygene)
D3 Milligan *et al.*, 1998. Plant Cell 10:1307-1319.
D4 Zaitsev *et al.*, 2001. AC AY055116
D5 Song *et al.*, 2003. PNAS USA 100:9128-9133.
D6 Bradeen *et al.* Mol. Gen. Genomics 269:603-611.
D7 EP-A-1334979 (Kweek-en Researchbedrijf Agrico B.V.)
D8 van der Vossen *et al.*, 2003. Plant J. 36:867-882

1.2 It is noted that the sequences disclosed in D1 and D2 do not consist of the sequences depicted in SEQ ID NOs:7 or 9 of the present application. They only show 99.9% identity to said SEQ ID NOs.

1.3 Documents D1 - D3 disclose sequences that fall within the scope of claim 8 (c) - (l). Claim 8 does not meet the requirements of Article 33(2) PCT. The same holds true for dependent claims 9 - 19 and for claim 20 directed to a polypeptide having Rpi-blb2 activity. (please see Item VIII, paragraph 3.)

1.4 D1 (e.g. paragraph bridging pages 9750 and 9751) and D2 (e.g. page 13, lines 5-18) also disclose transgenic plants that contain the disclosed sequences and thus anticipate the subject-matter of present claims 23 - 25, 30 and 31.

2. Article 33(3) PCT (Inventive step)

2.1 Present claims 21, 22, 34 - 43 do not contain any feature that would render them

inventive over the prior art D1 and D2.

2.2 Applicants have chosen to disclaim SEQ ID NOs:7 and 9 as listed in the present application and disclosed in D1 and D2. These sequences show around 90% identity to the polynucleotide sequences of present claims 1 and 8. It appears that said sequences do not provide the technical effect that forms the basis for the present application, namely the provision of sequences that confer resistance to plant pathogens of the phylum Oomycetes.

2.3 Claims 2 (c) - (l) and 8 (c) - (l) nevertheless relate to sequences that show an even lower identity to SEQ ID NOs:7 and 9. The description does not provide credible evidence that these sequences would solve the technical problem. Claims 2 and 8 do therefore not meet the requirements of Article 33(3) PCT. The same holds true for claim for dependent claims 3 - 7 and 9 - 43.

2.4 Claim 1 is directed to a method for generating or increasing the resistance of a plant to a(**ny**) plant pathogen of the phylum Oomycetes comprising increasing the activity of (**any**) Rpi-blb2 protein in the plant or a tissue, organ or cell of a plant or a part thereof.

2.5 The description does once again not provide credible evidence that the claimed method would be effective for any plant pathogen of the phylum Oomyceta by increasing the activity of any Rpi-blb2 protein. Claim 1 does not meet the requirements of Article 33(3) PCT over its entire scope.

Re Item VI

Certain documents cited

Certain published documents

Application No Patent No	Publication date *(day/month/year)*	Filing date *(day/month/year)*	Priority date *(valid claim) (day/month/year)*
EP-A-1334979	13.08.2003	08.02.2002	-

Document D7 discloses genes and proteins that confer resistance to *Phytophthora infestans*. The Rpi-blb2 protein of the present application seems to possess the same activity. Additionally D7 discloses methods and products employing said sequences. Moreover, the sequences of D7 fall under the scope of present claims 2 (d) and 8 (d). Consequently the subject-matter of present claims 1 - 43 is anticipated by D7.

Re Item VIII

Certain observations on the international application

1. Claims 2 and 8 have been drafted to contain separate independent technical features (in total **24** different features). They appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness (Article 6 PCT). Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent features makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection (Article 5 PCT).

2. Present claim 8 insofar directed to "a nucleic acid molecule expressing a polypeptide encoded by a segment of chromosome or linkage group 6 of *Solanum bulbocastanum* or *Solanum tuberosum* which co-segregates with a marker selected from Table 3a or 3b and which mediates resistance to a pathogen of the phylum Oomyceta" relates to a method defined by reference to a desirable characteristic or property, namely co-segregating with defined markers and mediating resistance to a pathogen. Present claim 8 does not meet the requirements of Article 6 PCT.

3. Present claim 8 is drafted to comprise a disclaimer. Under EPO rules of practice (Article 84), disclaimers are only admissible if the subject-matter of a claim cannot technically be defined directly more clearly and concisely. This does not seem to be the case for the subject-matter of present claim 8. It appears that the subject-matter could be defined more precisely, so that it does not collide with the sequences disclaimed. They show a 90% identity to SEQ ID NOs:1, 3, 5 or 6. Therefore it

appears, that the scope of claim 8 could be positively defined without colliding with the sequences disclosed in D1 - D3. The same holds true for present claim 2 and all claims depending on or relating to claims 2 and 8. The claims will be treated as if they do not contain disclaimers.

PCT/EP04/08683
AGRICO RESEARCH

13 June 2005

New Claims

1. A method for generating or increasing the resistance of a plant to a plant pathogen of the phylum Oomyceta comprising increasing the activity of Rpi-blb2 protein in the plant or a tissue, organ or cell of a plant or a part thereof.

2. The method of claim 1, wherein said Rpi-blb2 protein is encoded by a polynucleotide comprising a nucleic acid molecule selected from the group consisting of:

   (a) nucleic acid molecule encoding at least the mature form of the polypeptide depicted in SEQ ID NO: 2 or 4;
   (b) nucleic acid molecule comprising the coding sequence as depicted in SEQ ID NO: 1 or 3 or 5 or 6 encoding at least the mature form of the polypeptide;
   (c) nucleic acid molecules the nucleotide sequence of which is degenerate as a result of the genetic code to a nucleotide sequence of (a) or (b);
   (d) nucleic acid molecule encoding a polypeptide derived from the polypeptide encoded by a polynucleotide of (a) to (c) by way of substitution, deletion and/or addition of one or several amino acids of the amino acid sequence of the polypeptide encoded by a polynucleotide of (a) to (c);
   (e) nucleic acid molecule encoding a polypeptide the sequence of which has an identity of 70% or more to the amino acid sequence of the polypeptide encoded by a nucleic acid molecule of (a) or (b);
   (f) nucleic acid molecule comprising a fragment or a epitope-bearing portion of a polypeptide encoded by a nucleic acid molecule of any one of (a) to (e);

RN:th

(g) nucleic acid molecule comprising a polynucleotide having a sequence of a nucleic acid molecule amplified from a nucleic acid library using a primer as listed in Tab. 3b;

(h) nucleic acid molecule encoding a fragment beginning with amino acid: 1, 30, 50, 100, 200, 300, 500, or 1000 and stopping with amino acid 1276, 1000, 500, 300, 200, 50, or 1 of a polypeptide encoded by any one of (a) to (g);

(i) nucleic acid molecule comprising at least 20 nucleotides of a polynucleotide of any one of (a) or (d);

(j) nucleic acid molecule encoding a polypeptide being recognized by a monoclonal antibody that have been raised against a polypeptide encoded by a nucleic acid molecule of any one of (a) to (h);

(k) nucleic acid molecule obtainable by screening an appropriate library under stringent conditions with a probe having the sequence of the nucleic acid molecule of any one of (a) to (j) or of a fragment thereof of at least 20; and

(l) nucleic acid molecule the complementary strand of which hybridises under stringent conditions with a nucleic acid molecule of any one of (a) or (k);

or the complementary strand of any one of (a) to (l);
or expressing a polypeptide encoded by a segment of chromosome or linkage group 6 of Solanum bulbocastanum or Solanum tuberosum which co-segregates with a marker selected from table 3a or 3b and which mediates resistance to a pathogen of the phylum Oomyceta
and whereby the polynucleotide has not the sequence of Mi1.1 or Mi1.2 as depicted in Seq. ID NO.: 7 or 9.

3. The method of claim 1 or 2, wherein the activity of a further resistance protein is increased.

4. The method of any one of claims 1 to 3, wherein activity is increased due to a de novo-expression.

5. The method of any one of claims 1 to 4, wherein the endogenous activity of a Rpi-blb2 and/or the further resistance protein is increased.

6. The method of any one of claim 1 to 5, comprising one or more of the following steps

a) stabilizing the resistance protein;
b) stabilizing the resistance protein encoding mRNA;
c) increasing the specific activity of the resistance protein;
d) expressing or increasing the expression of a homologous or artificial transcription factor for resistance protein expression;
e) stimulate resistance protein activity through exogenous inducing factors;
f) expressing a transgenic resistance protein encoding gene; and/or
g) increasing the copy number of the resistance protein encoding gene.

7. The method of any one of claims 1 to 6 which results in reduction in the sporulation index of at least 30% after infection with P. infestans compared to a wild type.

8. A polynucleotide encoding a Rpi-blb2 protein comprising a nucleic acid molecule selected from the group consisting of:

(a) nucleic acid molecule encoding at least the mature form of the polypeptide depicted in SEQ ID NO: 2 or 4;
(b) nucleic acid molecules comprising the coding sequence as depicted in SEQ ID NO: 1 or 3 or 5 or 6 encoding at least the mature form of the polypeptide;

(c) nucleic acid molecule the nucleotide sequence of which is degenerate as a result of the genetic code to a nucleotide sequence of (a) or (b);

(d) nucleic acid molecule encoding a polypeptide derived from the polypeptide encoded by a polynucleotide of (a) to (c) by way of substitution, deletion and/or addition of one or several amino acids of the amino acid sequence of the polypeptide encoded by a polynucleotide of (a) to (c);

(e) nucleic acid molecule encoding a polypeptide the sequence of which has an identity of 70% or more to the amino acid sequence of the polypeptide encoded by a nucleic acid molecule of (a) or (b);

(f) nucleic acid molecules comprising a fragment or a epitope-bearing portion of a polypeptide encoded by a nucleic acid molecule of any one of (a) to (e);

(g) nucleic acid molecule comprising a polynucleotide having a sequence of a nucleic acid molecule amplified from a nucleic acid library using the primers as listed in Tab.3b;

(h) nucleic acid molecule encoding polypeptide fragment beginning with amino acid: 1, 30, 50, 100, 200, 300, 500, or 1000 and stopping with amino acid 1276, 1000, 500, 300, 200, 50, or 30 of a polypeptide encoded by any one of (a) to (g);

(i) nucleic acid molecule comprising at least 20 nucleotides of a polynucleotide of any one of (a) or (d);

(j) nucleic acid molecule encoding a polypeptide being recognized by a monoclonal antibodies that have been raised against a polypeptide encoded by a nucleic acid molecule of any one of (a) to (h);

(k) nucleic acid molecule obtainable by screening an appropriate library under stringent conditions with a probe having the sequence of the nucleic acid molecule of any one of (a) to (j) or of a fragment thereof of at least 20; and

(l) nucleic acid molecule the complementary strand of which hybridises under stringent conditions with a nucleic acid molecule of any one of (a) or (k);

or the complementary strand of any one of (a) to (l);
or encoding a polypeptide encoded by a segment of chromosome or of linkage group 6 of Solanum bulbocastanum or Solanum tuberosum which co-segregates with a marker selected from table 3a or 3b or comprises a replication site or hybridisation site for said marker and which mediates resistance to pathogens of the phylum Oomyceta;
and whereby the polynucleotide does not consist of the sequence shown in Rossi et al. 1998, PNAS USA 95:9750-9754, Milligan et al., 1998, Plant Cell 10: 1307-1319, or WO 98/06750.

9. The polynucleotide of claim 8 or the method of any one of claims 1 to 7, wherein the marker is E40M58, CT119, or CT216.

10. The polynucleotide of claim 8 to 9 which is DNA or RNA.

11. A method for making a recombinant vector comprising inserting the polynucleotide of any one of claims 8 to 10 into a vector or inserting said polynucleotide and a further resistance protein.

12. A vector containing the polynucleotide of any one of claims 8 to 10 or comprising said polynucleotide and a further resistance gene or being produced by the method of claim 11.

13. The vector of claim 12 or the method of any one of claims 1 to 7 in which a polynucleotide encoding Rpi-blb2 protein or encoding the further resistance protein is operatively linked to expression control sequences and/or is operatively linked to a nucleic acid sequence encoding a transgenic expression regulating signal allowing expression in prokaryotic or eukaryotic host cells.

14. The vector of claim 12 or 13 or the method of any one of claims 1 to 7 in which the polynucleotide encoding Rpi-blb2 protein or encoding a further resistance protein is operatively linked to expression control sequences of the same species origin as the polynucleotide encoding Rpi-blb2 protein or the further resistance protein.

15. A method of making a recombinant host cell comprising introducing the vector of any one of claims 12 to 14 or introducing said vector and a vector for expressing a further resistance protein into a host cell.

16. A host cell produced according to the method of claim 15 or genetically engineered with the polynucleotide of any one of claims 8 to 10 or the vector of any one of claims 12 to 14 or genetically engineered with said vector or polynucleotide and a vector or a polynucleotide for expressing a further resistance protein.

17. The host cell of claim 16, which is E. coli, Baculovirus, Agrobacterium, or a plant cell.

18. A process for the production of a Rpi-blb2-polypeptide comprising culturing the host cell of claim 16 or 17 and recovering the polypeptide encoded by said polynucleotide and expressed by the host cell from the culture or the host cells.

19. A polypeptide having the amino acid sequence encoded by a polynucleotide of any one of claims 8 to 10 or obtainable by the process of claim 18.

20. A polypeptide having Rpi-blb2 activity.

21. An antibody that binds specifically to the polypeptide of claim 19 or 20.

22. An antisense nucleic acid molecule comprising the complementary sequence of the polynucleotide of any one of claims 8 to 10.

23. A method for the production of a transgenic plant, plant cell or plant tissue or a part thereof comprising the introduction of the polynucleotide of any one of claims 8 to 10 or said polynucleotide and a polynucleotide encoding a further resistance protein, or the vector of any one of claims 12 to 14 into the genome of said plant, plant tissue or plant cell or a part thereof.

24. A plant cell comprising the polynucleotide of any one of claims 8 to 10, the vector of any one of claims 12 to 14 or obtainable by the method of claim 23.

25. A transgenic plant or plant tissue or a part thereof comprising the plant cell of claim 24.

26. A method for producing a plant or a part thereof resistant to a plant pathogen of the phylum Oomyceta comprising the step:
expressing in the plant or a part thereof the polypeptide of claim 19 or 20 and a further resistance protein.

27. A method for producing a plant or a part thereof with a durable resistance to a Phytophthora sp. comprising co-expressing in the plant or a part thereof Rpi-blb and Rpi-blb2 protein or the polypeptide of claim 19 or 20.

28. The transgenic plant or plant tissue of claim 25 or produced according to claim 26 or 27, which upon the presence of the polynucleotide or the vector is resistant to a plant pathogen of the phylum Oomyceta.

29. Harvestable parts of the transgenic plant or plant tissue of claim 25 comprising the plant cell of claim 24.

30. Propagation material of the transgenic plant or plant tissue of claim 25 comprising the plant cell of claim 24.

31. Use of the polynucleotide of any one of claims 8 to 10, the vector of any one of claims 12 to 14, or the polypeptide of claim 19 or 20 for producing a plant or a plant tissue, plant organ, or a plant cell or a part thereof resistant to a plant pathogen of the phylum Oomyceta.

32. A method for the identification of an compound stimulating resistance to a plant pathogen of the phylum Oomyceta comprising:

(a) contacting cells which express the polypeptide of claim 19 or 20 or its mRNA with a candidate compound under cell cultivation conditions;
(b) assaying an increase in expression of said polypeptide or said mRNA;
(c) comparing the expression level to a standard response made in the absence of said candidate compound; whereby, an increased expression over the standard indicates that the compound is stimulating resistance.

33. Use of the polynucleotide of any one of claims 8 to 10, the vector of any one of claims 12 to 14, the polypeptide of claim 19 or 20 or the antibody of claim 21, for identifying and/or producing compounds activating or stimulating plant resistance to a plant pathogen of the phylum Oomyceta.

34. A diagnostic composition, comprising the polynucleotide of any one of claims 8 to 10, the vector of any one of claims 12 to 14, the antibody of claim 21 or the antisense nucleic acid of claim 22 and optionally suitable means for detection.

35. A kit comprising the polynucleotide of any one of claims 8 or 12, the vector of any one of claims 12 to 14, the host cell of claim 16 or 17, the polypeptide of claim 19 or 20, the antisense nucleic acid of claim 22, the antibody of claim 21, the plant cell of claim 24, the plant or plant tissue of claim 25, the harvestable part of claim 29, or the propagation material of claim 30 and optionally a polynucleotide encoding Rpi-blb, Rpi-blb protein or an antibody against Rpi-blb.

36. A method for the production of a plant crop protectant providing the polynucleotide of any one of claims 8 to 10, the vector of any one of claims 12 to 14 or the polypeptide of claim 19 or 20 or comprising the steps of the method of claim 32; and formulating the polynucleotide of any one of claims 8 to 10, the vector of of claims 12 or 14 or the polypeptide of claim 19 or 20 or the compound identified in step (c) of claim 32 in a form applicable as agricultural composition.

37. The vector, host cell, plant cell, plant tissue, plant, use, kit or method of any one of claims 1 to 36, wherein the plant pathogen is of the order Pythiales or Peronosperales.

38. The vector, host cell, plant cell, plant tissue, plant, use, kit or method of any one of claims 1 to 37, wherein the plant pathogen is of the species P. infestans, Phytophthora erythroseptica, Phytophthora capsici, Phytophthora sojae, Phytophthora parasitica var. nicotianae, Bremia lactuca, Peronospera tabaci or Plasmopara viticola.

39. The vector, host cell, plant cell, plant tissue, plant, use, kit or method of any one of claims 1 to 38, wherein the resistance protein is characterized by a P-loop and a NBS domain.

40. The vector, host cell, plant cell, plant tissue, plant, use, kit or method of any one of claims 1 to 39, wherein the further resistance gene is a gene encoding Rpi-blb, R1, R-ber, Rpi1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, Ph-1, Ph-2 and/or Ph-3.

41. The vector, host cell, plant cell, plant tissue, plant, use, kit or method of any one of claims 1 to 40, wherein the further resistance protein is the Rpi-blb protein.

42. The vector, host cell, plant cell, plant tissue, plant, use, kit or method of any one of claims 1 to 41 wherein the plant, plant cell or plant tissue is selected from the group consisting of Menyanthaceae, Solanaceae, Sclerophylacaceae, Duckeodendraceae, Goetzeaceae, Convolvulaceae, Cuscutaceae, Polemoniaceae, and Hydrophyllaceae according to the Systema Naturae 2000, Brands, S.J., Amsterdam or has its origin thereof.

43. The vector, host cell, plant cell, plant tissue, plant, use, kit or method of any one of claims 1 to 42, wherein the polynucleotide, the polypeptide, the plant cell, the host cell, the plant tissue or the plant is derived from the Solanceae family, preferably S. bulbocastanum, potato (S. tuberosum), tomato (S. lycopersicum or Lycopersicon lycopersicum (L.) Karsten ex Farwell), petunia, tree tomato (S. betaceum), pear melon (S. muricatum) or eggplant (S. melongena).

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